The MAC Flyer

MAY 1981

Once Upon a Rescue . . . page 3

The MAC Flyer

MILITARY AIRLIFT COMMAND

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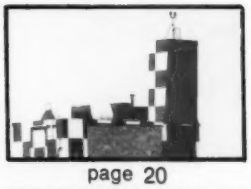
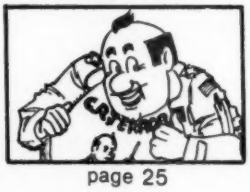
page 6



page 20



page 25

Once Upon a Rescue 3
Ops Normal at Three Zero 6
Rescue's Nerve Center 10
Lessons Learned 12
Causes and Effects 14
Hercules Hall of Fame 16
Flyer Forum 18
Common Cause 19
PAR for the Course 20
Book Reviews 22
Deja Vu: Alameda NAS 24
C.R. Terror 25
Quick Stoppers 28

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Flyer Call

Monuments and memorials, no matter how impressive, have a way of receding into the background of our everyday lives. Even those we could reach out and touch as we regularly walk by become familiar shapes on the well-worn routes we take to work each morning—part of the landscape. Our "more immediate" concerns seem to leave little room for pondering the larger, more basic questions these monuments represent. Standing in front of MAC Headquarters at noon and watching the crowd scurrying by, intent upon their lunchtime routines, I saw few who revealed any outward signs that they were even aware of the Airlift Memorial with its gilded words gleaming in the sun. I suspect that's why there is a Memorial Day. It allows us an opportunity to stop and reflect on the meaning of the supreme sacrifice made by our fellow servicemembers throughout our nation's history.

In keeping with this theme, we have included a number of rescue-related articles in this issue. We can't think of a more appropriate time to dedicate a portion of *TMF* to the men and women of the Aerospace Rescue and Recovery Service, who recently marked that organization's 35th anniversary, and whose motto, "That Others May Live," exemplifies so well the spirit of sacrifice to which America pays homage on Memorial Day.

ADY

Once Upon a Rescue

by SMSgt Roy A. Taylor
HQ MAC/IGIOR (ARRS Branch)

The scream from my teammate suddenly confuses me. What's wrong? Why did he scream? Only moments earlier we were in the security of our HC-130 aircraft organizing our equipment for the jump mission. Now, as I drift down to the open sea, getting ready for my splashdown, his scream reenters my mind. No time to waste, the Atlantic Ocean at midnight, one hundred miles southwest of Bermuda, has that chilling tendency to swallow you, and my mind is already racing beyond.

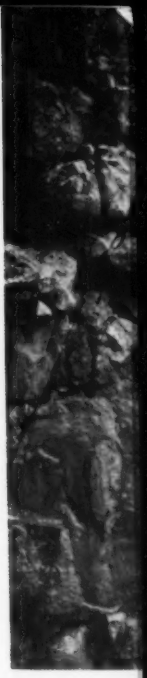
Splashdown! A firm pull on the lanyard of my butt-boat and presto, a one-man raft—inflated and ready for boarding. Quickly, I disconnect my parachute risers from the harness capewells and leap for the safety of the raft. However, my haste catches up to me. An open capewell nicks the rubber liferaft and I hear the hissing sound of escaping air.

"Chuck! Chuck! Are you okay?" No answer. Once again, "Chuck! Are you there?"

This time his voice echoes through the darkness—excited, but reassuring. "Over here, I'm okay."

Already the flares from the orbiting aircraft are beginning to light up the darkness around me and I get my first look at our reason for parachuting into the Atlantic Ocean this night. The German freighter is adrift a half mile downwind and I can see its small lifeboat not too far away recovering my teammate. Watching as calmly as a man in a sinking liferaft can, I wait to be picked up. Within minutes we are with our ten-year-old patient, treating his injuries and stabilizing his condition while we sail for the nearest port. The rest of the mission might be considered routine by rescue standards, but my excitement of earlier moments will remain locked in my memory forever.

It is now time for me to get to the original purpose of this article, which is to explain how safety is built into a career field that involves so many potentially dangerous facets such as parachuting, scuba diving, mountaineering and combat rescue, to name a few. The answers, I feel, are quite simple. First, I believe it's the development of self-confidence that whatever the hardships and hazards encountered, we can accomplish the mission safely. Additionally, there is the mutual trust that results from teammates purposefully unifying their efforts in very challenging situations. And finally it comes from the professionals who have trained and nurtured you, making sure you know and can



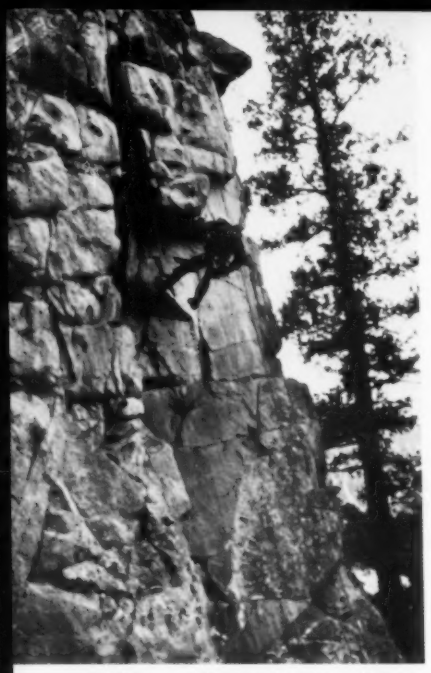
recognize your limitations, both physically and mentally. Those that doubt themselves are usually looking for a new career field long before they get the chance to jeopardize their safety; for those who endure, training advances. Each developmental stage is carefully monitored. One at a time, specialties are learned and continuously practiced until each PJ is totally proficient. Long before you're allowed to make a parachute jump with full scuba gear to treat a simulated survivor, for example, you must first understand the hazards involved with each step of the rescue—in this case, parachuting and scuba diving.

Parachuting! Sure there is a potential danger and I've heard the same question over and over: "Why does anyone want to parachute out of a perfectly good airplane?" To that I can say, maybe it's because I've seen some perfectly good airplanes hit the runway, skid a bit, and catch on fire; but no matter how hard I've hit the ground, my chute has never exploded in flames. Actually, the *real* answer is that I've been extensively trained, run the necessary pre-jump checklists in the aircraft, stayed within the prescribed training restrictions and have practiced, practiced, practiced!

Scuba diving! Unlike some commercial diving operations which may expose their divers to the maximum-safe bottom time and risk "bending" them, we carefully plan and conduct our operations with the diver's safety in mind. The need for decompression-stops during ascent to the surface is rare and the "buddy system" is both preached and practiced. I can assure you there is nothing more exciting than watching the movie "Jaws" Sunday night and making an open-sea scuba jump Monday night. The fantasies of the mind when you're in the water can run rampant. Besides, if trouble does come, misery likes company.

I believe the development of a safety-conscious teammember is crucial. Here the responsibility rests with the teams' NCOIC, his standardization programs, and his evaluator and instructor cadre. Leadership that is weak and lack-a-daisical develops people that take shortcuts, unnecessary risks and ignore safety. Flight examiners and instructors involved in the young teammembers' upgrade programs must show consistency and strict adherence to the rules. Deviations from regulations simply cannot be tolerated—there's too much at stake. I often remember the words of CMSgt Vigare (now retired), an individual I highly respect, who said, "Just when you think you've got it wired, that's when you burn in." And it can happen so quickly.

One morning I was called out for an injured mountain climber at Indian Pass in upstate New York. The weather was miserable with clouds laying so heavy near the summit of the mountains our helicopter couldn't get us up to the top of the pass. My teammate and I were forced to leave the helicopter using the rescue hoist and soon were linked up with park rangers and a member of the injured climber's group in the valley below. I started to get that "gut feeling" that things would get worse before they would get better and I was right. Two hours of uphill hiking with heavy equipment, compounded by torrential downpours, finally put us on the summit—wet, but



anxious. The injured climber was 80 feet from the top of a 1,000-foot vertical rock wall and he had been their for 18 hours. He had been alive when the group left him but now he wouldn't answer my calls as I got ready to rappel down to him. I reached him within minutes, but as I suspected, he was beyond my help. Injuries and exposure had taken their toll. Suddenly, all hell broke loose around me. There I was 80 feet from the summit with the Granddaddy of all spring storms rushing at me. What am I doing here? Thunder, lightning, hail, wind and rain are words people learn to hate without ever having to sit on a 12-inch wide ledge, 920 feet from a valley floor, while a spring storm passes by. "No sweat," I waited and at the first sign of a let-up in the weather, I quickly removed all the lifeless climber's anchor points and left him tied to the main rope hanging from the summit. I ascended the other rope with the use of mechanical aids (jumars for you pros) until I heard a sudden crashing sound somewhere above me. The first rule in mountaineering is "never look up." I didn't and it's a good thing, too, because a 40-pound rock that had dislodged from the summit hit my left forearm and deflected off my shoulder before crashing noisily to the valley floor below. Had I not taken the time to secure myself safely to the other rope, or made the mistake of looking up, I might have joined the ill fated climber for that great PCS move to heaven. Professional and amateur climbers sometimes ignore safety rules and take additional risks in order to upgrade a climbing route's difficulty standard. Add an inaccessible area of operation to this potential hazard and you've got some challenging circumstances to overcome should the need arise to rescue them.

What makes the job so unique is the potential for danger encountered in the pararescue business. The close camaraderie that develops further enhances this small and elite career field. Additionally, the desire and love for the job often force you to reach inside yourself and demand that little extra that's necessary to accomplish the mission. Otherwise, why would anybody want to risk his life to recover downed crewmembers in combat; or parachute into the North Atlantic to aid an injured youngster; or parachute in and recover the lone survivor of two Norwegian ships that sank during the same storm; or sit out a summer storm clinging to a perilous mountain ledge? Naturally, it's because of the *fun*—and you even get paid for doing it. What makes it safe? Confidence instilled from basic training to retirement. The training that's conducted in all types of environments and during varied conditions develops versatility in its members. Physical and mental conditioning to handle the stress is also essential. The same care used in the development of our future replacements has to be displayed and enforced by the managing NCOICs. We can little afford to let them think they've got it wired and we certainly don't want to watch them burn in. They must be continuously ready as in the *Prinsendam* mission when two PJ's deployed directly to lifeboats at sea loaded with the ship's survivors. Gathering them up and treating their medical problems throughout the night, our PJs instilled in the survivors the confidence necessary to overcome the less-than-desirable conditions that existed until help arrived the next day.

Such stories are endless, but the key ingredient in our remarkably high success rate is safety. It is always sobering to keep in mind that you've defeated the purpose of deploying to a survivor if you can't get there and back safely *yourself*.

And with that last pitch, I'll quit. However, for those of you who endured and faithfully read this far, I'd like to answer one last question. Why did Chuck scream? Simple, he landed right in a school of flying fish at night, in the open sea, and it scared the hell out of him. I think his scream was justified, don't you?

Ops Normal at Three Zero

by Major James A. Hassell
HQ MAC/DOOL
Special Activities Division

Less than 10 years ago, the United States was embroiled in a war in Southeast Asia and rescue forces were daily practicing the combat rescue skills that SMSgt Roy Taylor wrote about in his article on pararescue specialists (page 3). Major Hassell introduces us to another member of the ARRS team, the "King Bird." Flying the HC-130 Hercules, rescue crews set up airborne "lifeguard stations" over that foreign battlefield, using the call sign of King. This is an account of a search and rescue (SAR) coordinated by the crew of King 21 that saved two American airmen from certain death or capture. This is the way combat SAR was.
(Note: Earlier in the war, Rescue HC-130s answered to the call sign Crown, but were later dubbed King, as depicted in this account.)—Ed

0530: "Jack, Jack, King 21 on orbit at this time, ops normal." The morning sun is just coming up and the Laotian countryside east of Savannakhet is barely visible through the morning haze. Someone on the crew comments about the air evac mission the alert crew had the night before. A flight of F-105s is heard checking in with Invert, the area GCI site, en route to their target. It looks like the start of a "routine" day on orbit for the HC-130 crew.

0645: A single RF-4C out of Udorn RTAB breaks ground and takes up a northeast heading. Climbing through 8,000 feet, the RF-4, call sign Bullwhip 26, contacts Invert for vectors to the KC-135 for a pre-mission air refueling. As Bullwhip 26 transmits, the copilot of King 21 hits the UHF/DF switch, the needle swings and then locks on to the transmission. "Looks like DF number one is working again," he mumbles.

0730: Once off the tanker, Bullwhip 26 checks in with Cricket, the TAC C-130 airborne battlefield command and control center (ABCCC), prior to reaching the target area. His mission will be low-level reconnaissance of the area east of the Plain de Jars (PDJ).

0750: Down on the deck, the RF-4 streaks along a ridge line, then banks left to check another area. Suddenly there's a blinding flash. The fire warning light for the number two engine illuminates and the aircraft begins to yaw violently to the right. Moments later, smoke fills the cockpit and the front-seater gives the command to eject.

0835: As the morning drags on, the HC-130 crew flys their standard orbit from Nakhon Phanom (NKP) to Savannakhet. The radio operator tells the AC that some HH-53s from NKP will need an air refueling at 1230 when King 22 takes the orbit. As the navigator begins to write down the refueling information, a call comes in from Hillsborough, another ABCCC aircraft, whose orbit is to the south. He states that he wants King to contact Cricket.

0840: A quick frequency change and the copilot is talking to Cricket, "Understand from Hillsborough that you've got something for us."

All is silent on the HC-130 as the Cricket controller passes the information: "Bullwhip 26, an RF-4C, dropped off the tanker at 0725 local. Last talked to us at 0732 prior to starting his mission of low-level recce in the area east of the PDJ. He should have contacted us at 0830 prior to hitting the tanker for more gas. He's now ten minutes overdue; we can't establish radio contact. We think he might be down." Almost simultaneously, the crewmembers begin to set up for the SAR.

While the aircraft commander questions the ABCCC controller about the area the RF-4C was to work, the copilot informs the GCI site about the possibility of a search and rescue effort. The navigator begins to unfold a large-scale chart of the area and the radio operator establishes contact with Jack, the Rescue Coordination Center (RCC) at NKP and gives them the initial information. The next job is to establish a SAR objective. They know they needn't launch the Jollys without a confirmation of survivors. First objective is to locate two jet jocks down somewhere in 1,600 square miles of jungle and mountains 75 miles behind enemy lines.

0850: The HC-130 crew has had no luck in their initial communi-

cation search and no one has heard an ELT beeper. GCI hasn't had a target in that area for hours, and none of the bases in the area report the recovery of Bullwhip 26.

0853: "King, King, this is Nail 26 on guard. Do you read me?" crackles the UHF.

"Roger, Nail 26, contact King 21 on 282.8." The King 21 crew waits silently. Seconds pass, then finally Nail 26, a forward air controller out of NKP, calls again on the directed frequency. "Are you missing someone? I've got a beeper."

"Roger that 26. We're looking for an RF-4C, call sign Bullwhip 26, somewhere east of the PDJ." The Nail pilot acknowledges and advises he'll try and establish contact with the downed aircrew.

Instantly the navigator is advising the RCC, "Jack, King 21. We've got some beepers up here; pretty good chance of it being our boys. Suggest you launch the Jollys at this time."

0854: Simultaneously, our copilot is setting up for the SAR. GCI is notified to provide tanker support and a dedicated frequency. ABCCC is asked for strike frequencies and to check the availability of ordnance to support the SAR forces.

0902: "Pilot, navigator. Jollys are airborne and heading north, and they're scrambling the alert HC-130 to refuel the choppers."

0903: Nail 26 reports back, "Okay King, I've got both guys down here. Area is rugged hills with jungle about 20 miles northeast of Xieng Khouang. Bad guys are three miles west of the survivors. If you send in the Jollys now, we can get 'em out—no sweat."

"Roger, King copies. I'm appointing you on-scene commander at this time. Estimate the Jollys will be there in 40 to 45 minutes."

"In 45 minutes these guys will be in a truck on the way to Hanoi. You gotta do better than that," responds the Nail pilot.

"Roger, stand by." the silence in the HC-130 cockpit is deafening. For an instant, the pilot and copilot catch each other's glance. Then, as if remembering something, the aircraft commander silently looks at his chart of the area. Seconds later, realizing there are no other options available, he reaches over and switches number one UHF radio to guard.

"Pan, Pan, Pan, this is King 21 on guard. Any Air America helicopter in the vicinity of Xieng Khouang, contact King 21 on 282.8."

0905: For what seems like an eternity no one calls, then the radio comes to life.

"King 21, this is Papa-Quebec-Alfa. I'm south of Xieng Khouang. What's the problem?"

"King aircraft calling on guard. This is Tango-Lima-Sierra, flight of two Bell helos five southwest of Xieng Khouang. Can we be of assistance?"

The copilot of King 21 smiles from ear to ear. Someone shouts "All right!" while the nav rapidly plots the helicopters' positions.

"Papa-Quebec-Alfa and Tango-Lima-Sierra, this is King 21. We've got two guys down northeast of Xieng Khouang. A FAC, Nail 26, is overhead and says we can get 'em out if we act now. Can you be of assistance?"

"King, Papa-Quebec-Alfa has 45 minutes of fuel remaining. Let's get this show on the road."

"Tango-Lima-Sierra flight can give you one-plus-ten, King."

"Okay guys, contact Nail 26 on this frequency, Break—Nail

26, King 21. Did you copy that Air America helos Papa-Quebec-Alfa and Tango-Lima-Sierra, flight of two, are up frequency and ready to go to work?"

"Roger, King. Papa-Quebec-Alfa and Tango-Lima-Sierra, this is Nail 26. I'm approximately 35 northeast of Xieng Khouang at 4,000 feet. Press on up here and I'll pick you up. Break—King, this is Nail 26, get me some ordnance in case I need it."

"Pilot, navigator. Jollys report they're 60 south of Paksane. King 27 reported airborne at 0855."

Hearing the FAC's request, the HC-130 copilot contacts Cricket. "The FAC says he needs some ordnance. What can you provide?"

"King 21, Cricket. All I've got is a flight of two F-4s, call sign Barfly 15, working a target now. Nothing else for another 20 minutes."

"Roger, Cricket, 20 minutes is too long. Can you divert that flight of two? We'll use what they've got left."

0915: "King, King, this is Barfly 15. Cricket said to contact you for SAR support."

"Roger, Barfly. Proceed to the area Channel 89, 335 degree radial for 140 miles. Contact Nail 26 this frequency when in the area. State your ordnance and fuel remaining."

"Barfly has mark 82s and 20 mike-mike. Can give you 30 minutes before I'll have to hit the tank. ETA four minutes."

For the next four minutes, the FAC briefs the helicopters and the strike flight, then uses authentication procedures to make sure the downed crew are really who they claim to be and not enemy troops trying to ensnare the vulnerable choppers in a deadly trap. At 0920, the final stage of the SAR begins.

0920: "Bullwhip 26 Alfa and Bravo, this is Nail 26. Pop your smoke now. Break—Papa-Quebec-Alfa, you get the Bravo man there to your left. Tango-Lima-Sierra-lead, you come with me and get the Alfa man up ahead on the ridge. We'll use your wingman as a standby if we need him."

0925: While the F-4s slow down the movement of the enemy troops to the west, with the FAC directing the operation, both helicopter pilots complete their dangerous job of patiently hovering their vulnerable aircraft as the two crewmembers make the agonizing, seemingly endless ascent up the hoist.

0930: "King 21, this is Nail 26. Both of our boys are up safe and we're returning to Lima site 98."

0932: King 21 advises both Jollys to return to Nakhon Phanom and informs the RCC both survivors were recovered in good shape and will be taken to Lima site 98. When asked why the survivors weren't going to be brought back to Udorn that evening, the pilot of one of the civilian helicopters responds: "Tell the guys back at NKP and Udorn we'll deliver their friends tomorrow. Tonight we're going to have a party!"

With that message passed back to the Rescue Coordination Center, the crew of King 21 relaxes. A look around the cockpit shows smiles on everyone's face. No one says a word. None are needed. The navigator gets up to get a cup of coffee. As the engineer reclines his seat, he silently puffs on his pipe. The silence is broken only by the radio operator keying his mike button, "Jack, King 21, ops normal at 30."

Rescue's Nerve Center

Coordination is an essential ingredient in effective rescue operations.

by Major James P. Coe
Associate Editor

The major lifts the phone from its cradle and presses the lighted button on his console. "Rescue Coordination Center, Major Woolace," he announces.

At the other end of the line, an anxious voice implores, "This is Sheriff Green, Washington County. We've got a lost skier. He was working out in a remote area that recently had heavy snow fall and sometimes gets snow slides. Could you help us out with some dogs and maybe a helicopter?"

"We'll see what we can do," affirms the rescue coordinator. "Who reported the skier missing?"

Another mission is beginning for the men and women at the Air Force Rescue Coordination Center (RCC) in Headquarters Aerospace Rescue and Recovery Service (ARRS) at Scott Air Force Base, Illinois. The RCC is the single federal agency responsible for coordinating search and rescue (SAR) in the 48 contiguous states and providing SAR assistance to our North American neighbors, Canada and Mexico. During 1980 the RCC coordinated 1,734 SAR missions, resulting in 927 lives saved.

Major Woolace has an elaborate communication system in the RCC to assist him in helping the county sheriff, including telephones, a teletype, and air-ground radio. A resource file lists all federal, state, local and volunteer agencies which conduct or assist SAR efforts.

Depending on many mission factors, the rescue coordinator may ask ARRS for helicopter support, contact a local police department, call a Civil Air Patrol Wing, or get in touch with a Volunteer Mountain Rescue Club.

While the Center's missions are normally called search and rescue, they don't always involve dramatic recoveries in hostile environments. Often, rescue teams are sent to help seriously ill or injured people in remote or isolated areas. SAR missions may be launched to help aircraft crash victims, find missing airplanes, locate lost hunters or hikers, pinpoint an aircraft emergency locator transmitter (ELT), or help anyone who needs assistance in an emergency to reach adequate medical care.

The RCC will accept and act on initial notification from any agency—they received 7,199 such calls and ELT notifications during 1980. First, the Center attempts to determine the urgency of the situation and the facts surrounding the case. Depending on the quality of the information passed to the RCC, this phase of the SAR effort varies in length and intensity. Rescue controllers soon learn to separate the most serious emergency situations from those requiring lower priority attention. Some cases are closed during this phase of operation because the potential emergency is either found to be a false alarm, or can be taken care of without launching a full SAR effort.

Once the incident is verified as a bonafide distress case, the RCC then selects, briefs and launches an appropriate SAR force whose members have been secured from various controlling agencies. The force is selected based on the geographical area, terrain, weather, urgency of the situation, type of work required and safety.

While a SAR is in progress, the RCC tracks the mission in detail. They insure clear coordination among all agencies involved so that everybody knows what's going on and what's supposed to happen next. What appears to be the ideal SAR plan may change based on new information coming in during the mission, and the rescue coordinators continually strive to generate the most effective, efficient and safe search and rescue organization for each emergency. Once the mission is completed, RCC personnel debrief the participants.

In the case of our opening request for help, the rescue coordinator quickly confirmed the facts, found some volunteer SAR-dog groups and arranged military transportation for them to the objective area. An ARRS UH-1 helicopter brought them in and then stayed to participate in the search. The dogs found the skier and the helicopter airlifted him back to safety. The entire mission was accomplished in minimum time without injury to people or animals and the RCC logged another effective and safe SAR mission.

Lessons Learned

Sharing problems encountered while flying can help others avoid the same pitfalls.

by Captain Gerard D. Hicks
Det 24, 40 ARRS
Fairchild AFB, Washington

I am sure the ghostly, terror-stricken look on the face of the pilot was a reflection of my own facial expression. And even though there were no words exchanged at that particular moment, the message came through loud and clear to both of us—we'd never try that foolish stunt again!

As with so many flights ending in an accident or near miss, this particular mission, a Functional Check Flight (FCF), contained a cleverly concealed ingredient for disaster. You see, this particular FCF profile included a procedure that wasn't exactly covered in the flight manual. Instead, it fell into the unquestioned category of "That's the way we've always done it," and the procedure had been guaranteed flawless during past FCF flights. I'm sure the reason for the lumps in our throats was obvious when the pilot and I found our *flawless* procedure had placed our helicopter into that dangerous situation known as settling with power. Quickly developing the aerodynamic characteristics of a rock, the chopper lost altitude faster than we could have ever imagined. And even though we recovered safely, the fact we did so at an altitude where we were looking up at nearby 50-foot telephone poles was far from comforting.

Back at our unit, as a newly minted copilot, I naively expected the details of our FCF incident to be passed on to the other pilots. Several weeks and a couple of pilot meetings later, however, there was still no word being spread about our incident. This all began to leave a bad taste in my mouth as my mild fears about admitting our mistake were overcome by questions: First, what's going to happen the next time that "guaranteed" FCF procedure is performed? Second, why won't the pilot or even his inexperienced copilot say something to warn others? After one of those behind closed door sessions, I had at least a partial answer to my second question. It was made very clear to me that you did not discuss your mistakes in the presence of the unit's hierarchy. And even worse, your (then) controlled OER and career were at stake everytime you opened your mouth, or so most of the pilots thought.

Good grief, I wondered later, what kind of price would we have to pay that could be worse than the possible loss of a crew and their aircraft? A bit of confessing and a momentary loss of pride was all the pilot and I had at stake. Yet, our FCF incident remained one of the best kept secrets in the Air Force.

On the other side of the coin, the younger pilot's fears of unfavorable repercussions in return for their honesty may have had some basis in the way things were run in the unit. Pilot meetings were often a one-way street where standardization and safety would preach and those of us in need of salvation would listen. Audience participation was rarely offered or solicited. I never saw anyone give the *honest* approach a fair shot.

As many a brash young pilot had done in the past, I made all sorts of promises to myself that I would change this unhealthy situation. Someday, in a position of authority, I would pass on what I saw to all who would listen; damn my career, full speed ahead! A short time later, my new-found ideals were put to the test.

Our unit frequently supported the local civilian community hospitals with a helicopter medical evacuation service. Many of these flights were routinely made to roof-top helipads at the various hospitals. One warm summer day three years ago, we landed at one of these pads and picked up a heavier-than-normal load of

Honorable Mention, 1980 MAC Flying Safety Writing Contest

medical specialists and their equipment. Often, the pilots in our unit only concerned themselves with the helicopter's ability to hover on its own cushion of air at a four-foot height above the hospital pad. With most of the pilots in the unit at that time being new to the rotary-wing world, little thought was given to what could happen when we lost that cushion of air as we passed over the edge of the hospital at slow takeoff speeds. For those of you unfamiliar with a helicopter, its ability to hover out of its own cushion of air is in part limited by the power the aircraft's engines are capable of producing under various conditions. This fact was never more apparent than at the precise moment the aircraft commander eased our helicopter off the hospital pad and out over the city several hundred feet below. Even using 100% power, we were rapidly losing altitude. Fortunately, the AC was one of those old heads who stopped counting his flying time well into the thousands of hours. He managed to fly us out of the descent, but not before we were looking up at the tree tops in the hospital parking lot.

Returning to the unit, this earnest young co-pilot timidly crept into our standardization office and quietly told all. To my surprise, downgrade action was not the order of the day. Instead, our chief of standardization was delighted to have someone come forward and share the lessons they had learned. At the next pilot's meeting, the spotlight was on me and my most recent experience. A lively discussion involving all of the aircrew members followed, and the outcome was a religiously followed practice of frequently reviewing the problems associated with operating from rooftop helipads.

Approximately three years have passed since that incident, and I have gained much more flying experience and the title of flight examiner. Even so, I still manage to make mistakes. Quite a few of them in fact! But what of the promises I made to myself three years ago; have they fallen by the wayside along with my many New Year's Resolutions? No, not really. To keep the atmosphere of honesty alive, I most recently subjected myself to the scrutiny of our aircrews and discussed a lesson I learned from a very foolish mistake made on one of my flights. I'd be kidding you if I said everything about that discussion was perfect; some of the diehards from the old school of thought cringed in their seats as I made my confession. But in general, the ice has remained broken. Our unit's aircrews are developing the attitude that "If a flight examiner can admit his mistakes in public, and it doesn't seem to have wreaked havoc on his career, then maybe I should relate what happened to me on my last 'exciting' flight."

All too often we forget that to err is human, and in our own minds we either expect to receive, or plan to dish out, the worst measure of punishment for a single mistake. My own experience under several supervisors has shown that in reality just the opposite generally occurs. If you cannot honestly say that the aircrew members in your unit can share their experiences freely, face the facts: We're all going to make mistakes—with some of them falling into the real bonehead category. However, as supervisors, standardization types, pilots, and aircrew members in general, we may be setting ourselves up for disaster on our very next flight if we fail to encourage the sharing of lessons learned.

MAC crewmembers have many opportunities to anonymously admit their mistakes publicly so that everybody can learn from them. The USAF Hazard Report, "There I Was" program, Hazardous Air Traffic Report, and NASA's Aviation Safety Reporting System [ASRS] are some of them. The Flyer *also publishes a special feature, "Flyers Anonymous," for the purpose of anonymously sharing lessons learned.—Ed*

ABOUT THE AUTHOR

Captain Hicks was commissioned through the AFROTC program at Indiana University. He accepted an educational delay, earning a master's degree from Newark College of Engineering, and subsequently entered Undergraduate Helicopter Flight Training at Fort Rucker, Alabama. After receiving his wings, he attended advanced helicopter training at Kirtland AFB, New Mexico. From there, he was assigned to Fairchild AFB, Washington where he is currently a Flight Examiner in the UH-1N.

Causes and Effects

Here are some selected accident causes from past mishaps which could rear their ugly heads again for the unwary aircrew.

From 1975 through 1980 Military Airlift Command had 39 flight mishaps which ended in complete destruction of 20 aircraft and, most tragically, the loss of over 200 lives. These accidents happened for a variety of reasons, but almost all resulted from a number of factors which linked together to cause a disaster. Nearly every one of those mishaps could have been prevented, if the people involved had foreseen the ultimate results of their decisions and actions. With prevention in mind, we present a general list of mishap factors that directly or indirectly contributed to major mishaps in the last few years. The factors are subjectively grouped into three broad categories: material, environmental, and operations. Operations is further broken down into supervision and aircrew factors.

Material

Material factors are associated with organizations and people that deal with the aircraft as a machine. They include design, production, maintenance, supply and logistic management.

•Failure of an engine compressor component caused a fire that spread through the nacelle. The fire warning system did not detect the fire, and the suppression system did not put it out when the agents were discharged.

•A cockpit interphone system malfunctioned and distracted a pilot during a critical phase of flight.

•One transport was designed so that it was possible to raise the gear handle with the main gear struts partly extended while the aircraft was still on the ground.

•Internal failure of systems components, such as valves or switches, went undetected until they caused a more serious problem.

•Aux tank fuel gauges were inoperative so they didn't show failure of the tanks to feed.

•Warning light system was not adequately designed to alert the crew to a failed engine anti-ice valve.

•Limitations of Ground Proximity Warning Systems (GPWS) caused them to give inaccurate warnings. They also suffered from malfunctions that generated false alerts. Both problems tended to decrease aircrew confidence in the system and prompted many of them to inhibit or disable the GPWS.

Environment

Environmental factors include circumstances surrounding the aircraft's operation. In general, commanders, supervisors, and aircrews can do little to change these factors. However, they

often combine with other mishap-makers to help build a fatal sequence of events.

•Weather contributed to mishaps when aircraft were operated into fog, thunderstorms, high-probability-of-lightning-strike conditions, snow and ice.

•Some airfields presented no outside visual cues for a night VFR approach except the runway environment itself.

Operations

Operations factors involve the people who fly the aircraft and those who supervise their activities. Included are actions by aircrew members, ATC controllers, operations managers, and the folks who write and design publications used directly in aircraft operations (Dash Ones, FLIP, etc.).

Operations Supervision

•Pilots flying certain MAC weapons systems weren't getting enough training in flying VFR approaches to austere airfields.

•Information on aircraft egress equipment in a Dash One wasn't as clear as it should have been. Detailed emergency operating instructions were not available.

•Instructor pilot did not monitor the student's flying closely enough to insure the gear was down and all checklists completed before landing.

•Dash One did not present enough information about what would happen if the aircraft CG was shifted due to a fuel imbalance.

•IP failed to take control of the aircraft soon enough to keep the student from putting it into a position from which neither of them could recover.

Aircrew Factors

•Crewmember did not get sufficient rest before mission, even though time was available.

•Crew accepted clearance for a visual approach under less-than-ideal VFR conditions when an instrument approach was available.

•Pilot recognized a dangerous situation too late to recover or go around.

•Pilot allowed aircraft to exceed normal sink rate, bank angle, speed, or rpm limits during approach to landing.

•Pilot became disoriented during landing pattern due to lack of visual cues.

•IP failed to execute a proper recovery after assuming control of the aircraft.

•Copilot and other crewmembers did not recognize, announce or act on a major system malfunction, deviation from normal flight parameters, or hazardous situations, because they were disoriented, distracted or their attention was channelized either on flight instruments or outside the aircraft.

•Crew failed to operate the landing gear properly. They either did not lower it for landing, or raised it while aircraft was on the ground.

•Crew improperly analyzed a system malfunction and either took the wrong corrective action or did nothing.

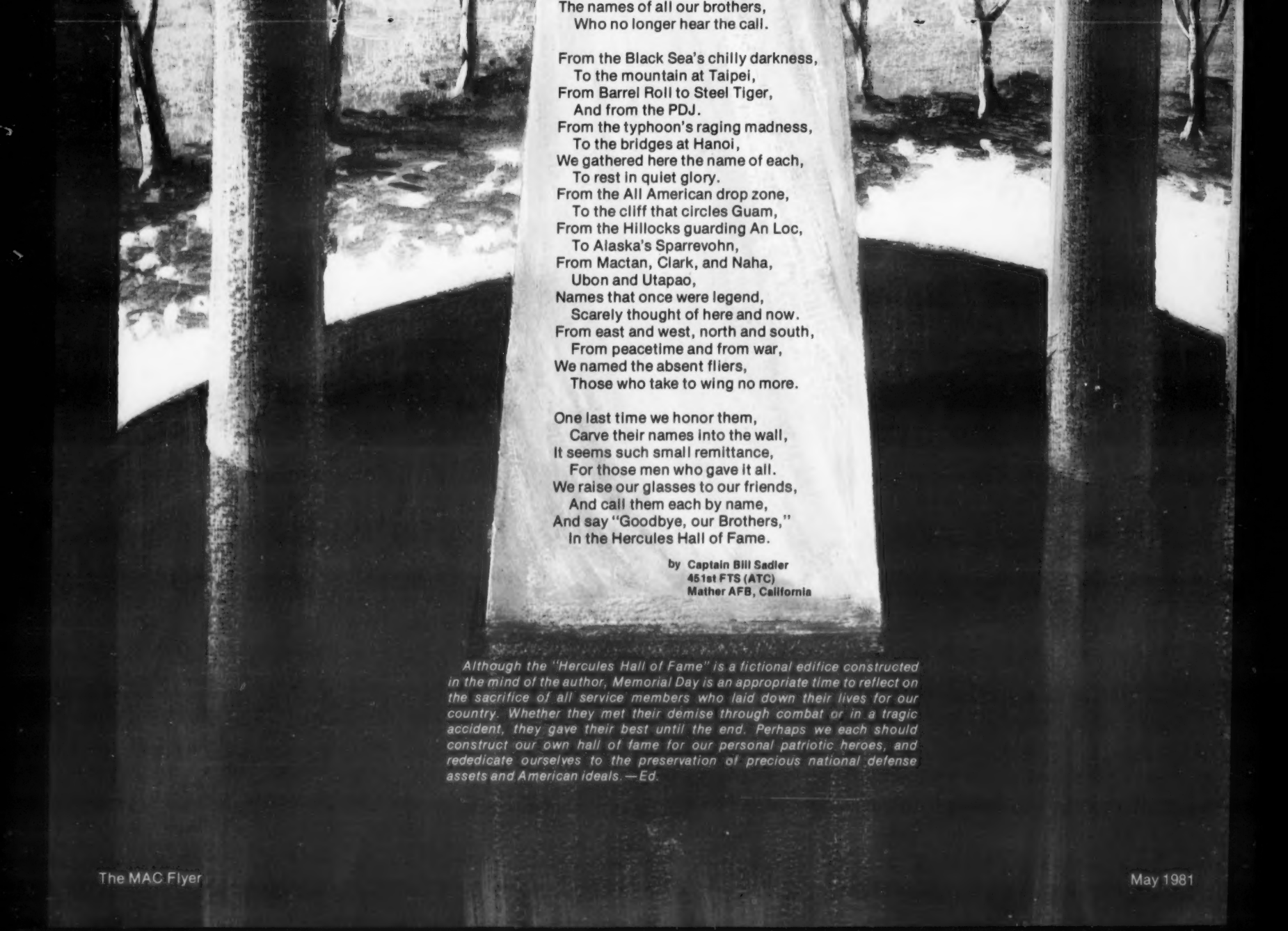
•Crewmembers failed to follow proper airdrop procedures.

You have probably noticed that the mishap-making factors were stated in fairly general terms. We did this for two reasons: First, a circumstance, decision, or action that contributes to a mishap in one type aircraft may also be a hazard in another MAC weapons system. Certainly there is enough commonality in the effects of the environmental factors to make those hazards a concern to every flyer. Some of the material factors may be a bit more specific, but many of our aircraft share similar systems (hydraulics, flight controls, etc.) that suffer from nearly identical malfunctions. In the operations field, the same kind of factors that helped cause the crash of a helicopter could, many times, contribute to the demise of a fixed-wing transport. Second, we wanted to insure the anonimity of the mishaps.

You may have already seen or figured out solutions to some of the problems in the cause-factor lists. Changes to regulations, technical orders and management procedures, including quality-control and stan-eval programs, certainly play a part in resolving the hazards. However, they aren't the whole answer. Personal awareness of the kinds of unsafe conditions that have historically led to catastrophic mishaps is also an important key to accident prevention.

As an aircrew professional working in our complex flying environment, spotting these factors wherever they occur during *your* mission can help you prevent an accident. Also, if you pick two or three of the mishap-making elements from the various lists and apply them to your own flying job, you can quite possibly come up with a believable accident scenario. If it's a little too close to real life, then you've uncovered a real hazard area that needs immediate resolution—it may even be material for a USAF Hazard Report. If you use this article as an awareness building tool, it should heighten your sensitivity to potential dangers around you, and you can thereby help prevent a serious mishap.

HERCULES
HALL OF FAME
From the most experienced Colonel,
To the youngest, greenest kid,
Someone had to immortalize them,
And remember what they did.
So we gathered them together,
And placed within this Hall,
The names of all our brothers,
Who no longer hear the call.



The names of all our brothers,
Who no longer hear the call.

From the Black Sea's chilly darkness,
To the mountain at Taipei,
From Barrel Roll to Steel Tiger,
And from the PDJ.
From the typhoon's raging madness,
To the bridges at Hanoi,
We gathered here the name of each,
To rest in quiet glory.
From the All American drop zone,
To the cliff that circles Guam,
From the Hillocks guarding An Loc,
To Alaska's Sparrevohn,
From Mactan, Clark, and Naha,
Ubon and Utapao,
Names that once were legend,
Scarely thought of here and now.
From east and west, north and south,
From peacetime and from war,
We named the absent fliers,
Those who take to wing no more.

One last time we honor them,
Carve their names into the wall,
It seems such small remittance,
For those men who gave it all.
We raise our glasses to our friends,
And call them each by name,
And say "Goodbye, our Brothers,"
In the Hercules Hall of Fame.

by Captain Bill Sadler
451st FTS (ATC)
Mather AFB, California

Although the "Hercules Hall of Fame" is a fictional edifice constructed in the mind of the author, Memorial Day is an appropriate time to reflect on the sacrifice of all service members who laid down their lives for our country. Whether they met their demise through combat or in a tragic accident, they gave their best until the end. Perhaps we each should construct our own hall of fame for our personal patriotic heroes, and rededicate ourselves to the preservation of precious national defense assets and American ideals.—Ed.

FLYER FORUM

Who Is Accountable for Flight Safety?

by Captain Jeffrey C. Butler
HQ MAC Flight Safety

We are. You and me and all the people associated with flying. This includes people who provide support services, maintain aircraft, print charts, schedule crews, maintain navigation aids, exercise command, and investigate mishaps, to name a few. Without them, we could not become safely airborne, nor proceed safely from point A to point B.

Flight safety depends on many professional people effectively, competently, and thoroughly performing their assigned tasks. How they conduct their flight-related responsibilities has as much bearing on flight safety as the attitudes aircrew personnel take when preparing for or engaging in flight. By managing the risks and carrying out the responsibilities associated with safety of flight, we should be able to prevent all mishaps.

Unfortunately, our system occasionally breaks down. This occurs when we allow mishaps to repeat themselves. Examination reveals that most flight mishaps result from old causes. There are very few new causes, and only occasional new twists to old ones. This does not mean that we lack imagination. Nor does it mean that our investigative efforts are overlooking something, although that is possible. What it means is that we continue to do the same things wrong, and given the right set of circumstances, occasionally kill ourselves. We must find a way to eliminate repeat mishaps.

If we are ever going to be totally effective in preventing accidents, we must stop reinventing the wheel. Generally speaking, we are showing a greater awareness and acceptance of the reasons for safety guidelines. This acceptance is evidenced by the lowered number of serious mishaps each year. In addition, we have reduced the loss of personnel, material, and weapons system resources. Overall, our mishap prevention efforts have been effective. But once in a while, a specific mishap occurs that we should have stopped. In a recent example, we who were most in tune with an old Class C mishap, its causes, and corrective actions, did not recognize and act upon the things we should have. Had our measures been completely effective and thorough, a recent Class A mishap could probably have been avoided.

The difference between a Class C and a Class A mishap is the degree of loss—minor vs major damage; low vs high cost; no lives lost vs fatalities. Unfortunately, there is also a difference in perception. Our Class C mishap was less severe, warranting less attention. If it had been more thoroughly evaluated and tracked, certain procedures would have been changed in the technical manuals to reflect appropriate corrective actions. In this case, the commander, safety officer, and maintenance officer of the Class-C-mishap's unit at the time it happened should be non-specified contributors to the later Class A mishap. They were not aggressive in pursuing lasting corrective actions and as a result, years later, an aircraft was destroyed and people died. Similarly, higher headquarters personnel review mishaps and corrective actions. They also may be non-specified contributors to the mishap. You can logically conclude that this Class A mishap was the result of people failures at every working level.

To stop mishaps, we must each make a commitment to obey the regulations which govern our flying activities and exert pressure on those among us who willfully disobey. Second, we must make a similar commitment to correct deficiencies in our area of expertise when they are discovered. Third, aggressive follow-up that insures lasting corrective action is imperative. We are all part of our system and we must make it succeed. Everyone must effectively, efficiently, conscientiously, and professionally do their job. We must put our trust in others as they put theirs in us, there can be no other way. *We* are all accountable.

Common Cause

A seemingly insignificant occurrence can point out the symbiotic relationship between crewmembers and those who maintain the aircraft they fly.

by Captain Michael G. Wrenn
3588 FTS (ATC)
Ft. Rucker, Alabama

Like most day-in-the-life-of stories, this one begins with the ringing of an alarm clock in the wee hours of the morning. Airman First Class Bob Van Allen arose, if not with great zeal, at least with rugged grit, and blindly filled his bathroom sink with whisker scrapings. A five-level maintenance specialist with a rescue detachment, he was the crew chief on aircraft 672, otherwise known as "Save 17." This was his first assignment since finishing tech school. It wasn't everything he had ever dreamed of, but it wasn't that bad either, especially since he had become responsible for this particular UH-1N. The eight "saves" it had recorded since his arrival also added to his determination to do his best to maintain the aircraft in mint condition.

This morning, like every other working morning, Bob drove the 15 minutes to base and arrived at 0600. Save 17 was the alert bird and he wanted it out on the line and ready to go before the alert air crew reported in. The Huey had flown a range support flight the previous day, but landed after Bob's day shift had ended. His first glance inside the helicopter made his nostrils flare. He realized the detachment's range support mission was vital, but that was no reason to track huge cakes of mud into *his* aircraft and leave them there to dry. The 781 write-up really rubbed salt in the wound, "Aircraft interior dirty." Bob took this as evidence to support his previous conviction that "ops types" weren't really interested in the amount of work performed in the maintenance side of the hangar. Nor did they appreciate the glamorless, knuckle scraping, grease-coated drudgery of helicopter maintenance. They just flew off, silk scarves fluttering in the slipstream, and gleaming spurs jangling, to save lives, achieve lasting fame and compile favorable media coverage. Me, he thought, I just scrub their dirty helicopters and do my best to make sure 672 doesn't kill 'em—no news value in that; no recognition either it would seem.

At 0630, Major Paul, the operations officer, walked through the small door in the northeast corner of the hanger true to his habit of showing up at the office early and working hard. He saw Van Allen scraping clods of mud from under the pilot's seat. By this time Bob was splotched with dusty patches, but Save 17's interior looked polished and ready for business. The airman turned around and offered a greeting as Major Paul scanned the scrubbed cargo compartment and the dirt clods piled on a tarp lying next to the left skid.

"Looks like yesterday's crew brought home some extra real estate," the Major observed.

"Yes, sir," Van Allen agreed.

"Makes your job that much harder, doesn't it?"

"Sure does."

After a pause, Major Paul said, "I'll have a talk with the crews. Maybe we can clean up our act a little. There isn't an aircrew in the Air Force that could do its job without good maintenance. Sometimes we get smug and need a reminder of how paralyzed we'd be without good 'wrench turners!' "

"Thanks, sir." As the Major turned and left, Airman Van Allen smiled to himself and continued his preflight inspection.

PAR for the Course

An enlightening discussion of the strengths and limitations of Precision Approach Radar.

by Captain Charles M. Westenhoff
22 TASS, Wheeler AFB, Hawaii

Without comparing it to ILS, you could say how good a PAR is in ten words or less: It's every bit as good as a three-day weekend—always welcome and useful, but some are better than others. USAF approach controls, for example, normally have more than one PAR scope in operation at any one time, but we'll have to look at a couple of other things before discovering why this is important—more important than you might think.

First, how precise is precision approach radar? Putting it bluntly, it's sharper than a bowling ball. To be specific, it's precise enough to define separate aircraft in tight fingertip formation, the T-tail on a C-141, or the radar reflection of approach lights. However, this degree of precision is achieved by constant attention from the controller. The controller varies the receiver gain of the radar to get the best possible target. Essentially, as you get nearer to the runway, the controller turns the gain down so your target remains crisp and usable. If the controller

maintained only one setting all the way down final, targets in close would be too big for precision, and smaller aircraft wouldn't appear, until well down on final.

As you can see, the controller has more to do than just talk. In addition to varying the intensity of the radar, he or she must change the aim of the antennas. We know that two antennas on the same spot are used to get one PAR picture presented on a single split scope: an overhead view for course guidance and a side view for glide path informtion. Since the antenna is located to the side of the runway, it doesn't point straight down final. The controller must swing it around to track you along. Similarly, since the antenna isn't located at the touchdown point, the antenna aim must be lowered as your wheels approach the pavement.

Now for the kicker. We said USAF PARs have two or more controller positions operating most of the time so that more than one aircraft can be handled simultaneously. To avoid conflict, only one PAR scope has control of the receiver gain and antenna aiming, and the other scopes repeat the picture of the master scope. So what? Well, things can get complicated when there are several aircraft on final. Normally, using more than one scope at the same time isn't a problem, because the controller at the master scope compensates enough so that all aircraft can be tracked satisfactorily. But, what if there's a C-130 in front of you on two mile final, and you're at eight miles in your CT-39? With the gain turned down to give the C-130 a good approach, the other controller may not even be able to see you.

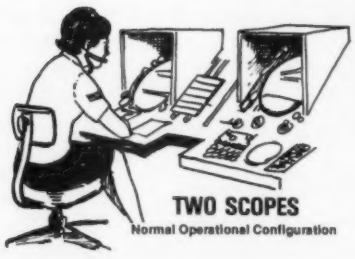
Or consider this situation: You're approaching one mile final on course and glide path, being controlled from a repeater scope. The contoller on the master scope is tracking an aircraft at six miles which is above glide path and off course. You could fly out of radar coverage because the antenna aiming won't cover both of you at the same time—"Radar contact lost, if runway not in sight . . . ."

The fact is, some PARs *are* better than others. When you're talked down by a controller at the repeater scope, that person is at the mercy of the master scope controller—and the relative position of other aircraft on radar final. While controllers normally compensate enough to permit simultaneous PARs, it doesn't always work as advertised. The causes are dissimilar aircraft, aircraft off track and critical spacing. But there are some things aircrews can do to help ensure a successful PAR approach.

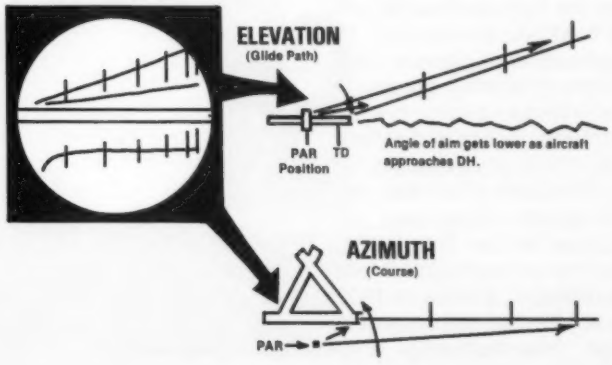
First, stick closely to EAC or other recovery times, especially in lousy weather—smooth flow of arrivals is critical.

Next, closely monitor fuel for your arrival. If fuel does get scarce, tell someone so you'll get an optimum PAR, with no one competing with you for tracking or power setting.

Finally, it's detrimental for any aircraft to get off course, no matter which scope is tracking you. That doesn't mean correct back to course by using a nonprecision navaid—that's *never* as precise as PAR. Your alignment is the controller's responsibility, so listen and follow directed headings without hesitation. Prompt compliance with control instructions could make the difference between a successful PAR to a full-stop landing and an unnecessary missed approach, either for yourself, or for some other flyer on final.



TWO SCOPES
Normal Operational Configuration



Fascinating reading for aviation buffs.

BOOK REVIEWS

by Major James G. Gibson II
Supervising Editor

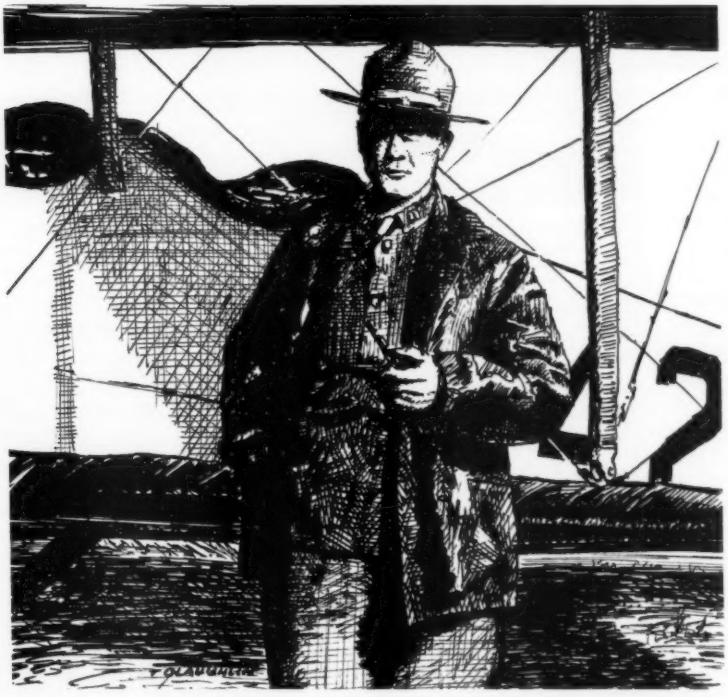
The First Aviators
by Curtis Prendergast

In the decade following the Wright Brothers' successful powered flights at Kitty Hawk, aviation grew and progressed at an astounding rate. This volume of the Time/Life series on "The Epic of Flight" traces that rapid transition from flimsy, kite-like flying machines to the comparatively sleek, powerful biplanes of the WW One era. Text material and vintage photos are combined to emphasize the human side of things by introducing you to the geniuses, fools and opportunists who played various roles in this amazing aerial parade. Examples include reliving the first heavier-than-air flight across the English Channel with Louis Bleriot in his delicate, 25-horsepower monoplane in 1909, and the excitement generated by Wilbur Wright during his demonstration flights at LeMans, France. You'll meet aviators like Glenn H. Curtiss, a racer and speed fanatic, who won the prestigious Gorden Bennett Cup at the first air meet, which was held in Rheims, France, in 1909. He later formed an American airplane manufacturing company and became a bitter rival of the Wright Brothers. There is a marvelous collection of Paris Air Exposition photographs from 1909, and displays of early aviation posters, toys and other memorabilia are reproduced in full color. Also included are accounts of the earliest "barnstormers," a blow-by-blow travelogue of the first transcontinental crossing of America by airplane, during which C. P. Rogers struggled across 4,231 miles in 84 days in a Wright Experimental Flyer dubbed "Vin Fizz," and a whole lot more. This is an extremely readable and interesting book and it's well worth the $12.95 it would cost to add it to your personal aviation bookshelf.

From The Wright Brothers To the Astronauts, The Memoirs of Major General Benjam D. Foulois—with Colonel C. V. Glines, USAF

He only stood five feet five, but General "Benny" Foulois has to rank as a genuine giant in the history of American military aviation. In 1907, while at the Signal Corps School, Foulois wrote a powerful thesis advocating and foretelling the potential of airpower. It was decades ahead of its time, but it set the stage for his future role as an airpower advocate during the rest of his career. His first ride in an aeroplane occurred in 1909, when he served as official Army observer on an acceptance flight—with Orville Wright as pilot—for Army Aeroplane No. 1. The next year he was shipped to San Antonio with orders to teach himself to fly and a $150 budget to pay for parts and supplies. Through trial and error—and the assistance of a lively correspondence with Orville Wright—Foulois accomplished his mission. One of the general's stated reasons for writing his memoirs is to set the record straight on his adversary relationship with General Billy Mitchell. It is obvious from the start that no love was ever lost between the two, and some of Foulois' revelations cast the legendary Mitchell, who didn't become involved with military aviation until 1916, in a totally different role than the popular characterization of him as a total hero and martyr for airpower. In 1920 Foulois went to Germany as a military attache. While there he met and won the confidence of many Luftwaffe

pilots, including Herman Goering, and learned of their plans to build the world's mightiest air force. Eventually he was even shown their hidden facilities and secret projects, and flew with them in planes the Allies weren't aware existed at the time. Foulois shipped reams of technical data and aeronautical material and information back to the United States, but it was largely disregarded as being outlandish and was promptly dumped. The awesome spector of German airpower during WWII confirmed that Foulois had been on to something, but being right was a small consolation as he anxiously watched America trying to make up for lost time when the hammer fell. After retiring in 1935, Foulois went on the road preaching the gospel of airpower to civic groups and others who would listen all across the country. Eventually he moved to Andrews AFB at the request of the Air Force Chief of Staff to live out his last years as an elder statesman for airpower. Foulois always worked unobtrusively and effectively, but he never backed down an inch when he felt his cause was on the line. Truly, he was responsible for laying much of the groundwork for American airpower. His memoirs tell how he did it despite a continuously uphill battle with Congress and many of his military contemporaries. His legacy should serve as an inspiration to those of us still facing many of the same kinds of challenges.



The Aviator
by Ernest K. Gann

The author of those well known aviation epics "The High and the Mighty" and "Fate is the Hunter" has done it again—this time with an intense little novel centered around a winter survival scenario. The setting is the Rocky Mountains; the time, the

late 1920s, when bold pilots in a menagerie of Stearmans and various other biplanes were hopscotching the mail across America with the same kind of derring-do demonstrated by the Pony Express Riders back in the 1860s. Tension starts to build early in the story when one of the mail planes, "Number 14," goes down after its engine conks out over a rugged, isolated mountainside threatened by snowslides. The pressure doesn't subside until the last page, and if I tell you any more than that, I run the risk of letting some of Ernie Gann's cats out of the bag and spoiling the adventure. Although "The Aviator" provides plenty of exciting entertainment, it is also noteworthy for its examination of those elements which often make the difference between living and dying for someone suddenly cast into a hostile environment with little to pull them through except their wits and a will to survive.

DEJAVU

Alameda Naval Air Station
(elevation 15 feet)

Located on the eastern edge of San Francisco Bay where sea birds abound, Alameda NAS is just three miles across the water from "Frisco," and one mile southwest of Oakland. Eight airfields are within 20 miles of Alameda, with the two largest and most active being Metro Oakland International (6 mi SE) and San Francisco International (10 mi SW). Moderate to heavy traffic should be anticipated at all times, with peak periods occurring in the early morning, late afternoon, and early evening. Alameda has two runways: 13/31 and 07/25. They cross to form an "A" shape, with base ops, parking ramps and most of the taxiways situated inside the two legs. Six miles out on the approach to runway 31 it is possible to mistakenly pick up runway 29 at Oakland visually and home in on it if you aren't on your toes. Towers, buildings and bridge supports of various heights create scattered obstacles in the Alameda vicinity. Ships and cranes off the ends of the runways can also pose a hazard to landing and takeoff on occasion, but ship movement advisories are available. Numerous obstructions in the airfield environs that don't meet C-5 and C-141 clearance criteria are listed in the IFR Supplement. Airlifters should consult the 22d AF airfield restrictions before venturing to Alameda.

—Adapted from ISD-Q6-723

Three mile final to runway 31. Docks in foreground can accommodate ships, including aircraft carriers, with a max height of 225 feet.

One-and-one-half miles on final to runway 13. Bay Bridge (not visible) is directly beneath aircraft. Oakland Ship Channel on the left crosses final approach course; tower normally issues ship advisories.

One-and-one-half mile final to runway 25. Large cranes at shipyard are 3/4 mile from approach end with some reaching 180 feet MSL.

C.R. TERROR

Inattention to flying duties gets C.R. and crew deep in Kimchee.

"Christmas shopping in May?" questioned C.R.'s skeptical side-kick as they entered the Clark Air Base flight planning room.

"Listen Sammy m'lad, anytime I get a mission up to Korea, it's the perfect time to slip in a little selective shopping for my favorite femmes, not to mention some terrorific toggery for yours truly. After all, the world's spiffiest airplane skipper has to keep up the image of fastidious fashion that's been nurtured with such great care over so many years. Where do you think I got this flight suit tailored?" C.R. raised his arms straight out, looking very much like an overweight scarecrow, and turned to model the custom-tailored Nomex. "This was redone to my personal specifications by Mr. Lee, and designed especially for quick turnarounds where time is of the essence and the secret to successful shopping is to hit the ground running. Watch!" With that, C.R. grasped the front of his flight suit, gave a spasmodic jerk, and in a flash was standing in street clothes with the green bag draped limply over his left arm. "It's a breakaway flight suit, Sam," C.R. grinned proudly. "What do you think?" he asked, probing for a response from his long suffering copilot who was momentarily struck dumb by this bizarre spectacle. Recovering a little, but still shaking his head, Sam mumbled slowly, "I've been to a circus, two rodeos, three county fairs and a hog calling contest and I never saw anything like that."

"Even submitted an Air Force suggestion on this modification," C.R. added, while he refastened the velcro seams of the *slightly* non-standard flying apparel around his stodgy torso. "But some dull headquarters weenies rejected it using some flimsy excuse about the idea not being operationally valid or some such balderdash. Oh well, another brilliant stroke of genius too far ahead of its time."

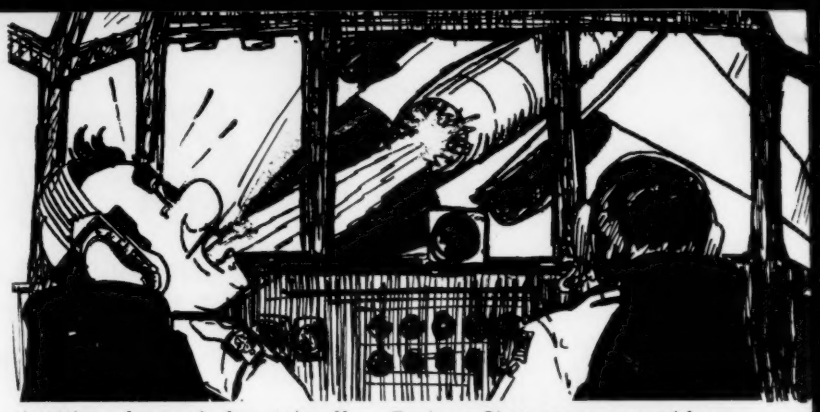
"Now, what's this about altitude restrictions around Osan?" C.R. asked with mock concern, returning reluctantly to his least favorite pre-mission activity.

After giving only minimal attention to his competent copilot's flight planning efforts, the Inscrutable Skipper proceeded to the flightline cafeteria where he devoted maximum attention to the snackbar consumables which he scarfed up like a hungry "Hoover". After feeding his face, the Fatuous Flyboy also stuffed the many zippered pockets of his sung-fitting flight suit with portable packaged goodies until he resembled a chubby chipmunk preparing for a long, cold winter. Finally the Lumpy-looking Leader and his company grade copilot made their way to the waiting C-130.

Noticing a huffing and puffing Sergeant Ty Downs wrestling mightily with a pallet, the Wry-witted Major called out with a chuckle, "Looks like you have the loading situation well in hand, eh sarge?"

"This is the last one, sir," the laboring loadmaster said breathlessly, adding, "I left the Form F up front with the navigator."

"Sam, why don't you go count the engines and wings and stuff while I see if Blinky got the radar fixed yet. The Chunky Skipper entered the cockpit just as Sergeant Lotta Gaines was putting the finishing touches on



the radar, with Blinky and the flight engineer looking on intently. "Aha, if it isn't my favorite radar specialist!" C.R. bubbled after recognizing the female maintenance technician.

"Good morning, Major Terror," she said as she snapped closed her tool kit. "The radar's good as new and there's no extra charge for the new RT-unit either," the cute and competent maintainer teased, handing MSgt Torque the forms and starting down the steps. "It's been a pleasure doing business with y'all."

"See you later, Lotta," called Max Torque. As soon as she was out of earshot, he commented seriously, "If I had five daughters instead of my five boys, I'd wish every one was just like her."

"Right you are, Sergeant," C.R. bantered. "Now that everything is in order we can get this high priority airlift mission on the road to the land of the morning calm and the afternoon shopping spree." Then, turning to Sam who had just come up the steps, he cautioned in mock seriousness, "Remember Sam, our mission is to fly and buy and don't let me let you forget it, hee, hee."

Quicker than you can say, "Mabuhay," the Philippine Flash and his merry band of green baggers were taxiing out for takeoff. "Yes Sam, Mr. Lee's shop is right outside the main gate. He can custom tailor *anything*, while you wait. He can even modify your flight suit the same as mine if you're interested," C.R. urged.

"No thanks," Sam parried. "I guess I'll stick to the standard issue gear—checklist complete, sir."

"As they say in the islands, 'It's up to you'," replied the Hercules Huckster in a pseudo-Tagalog accent, pushing the throttles forward for takeoff. "Ready or not, here we come," chortled C.R. as he pulled back on the yoke in an attempt to get the heavy-weight Herk into the air with a record minimum ground run.

After level off, the Chunky Charlatan turned over the controls to his trusted second-in-command and began compiling a rather lengthy shopping list. "Let's see," he mumbled, "a pair of jogging shoes and a new warmup suit for Tassels, a set of those brass butterflies for Sally, a tight knit sweater for Barbee. . ." C.R. continued the long list, pairing up names with gifts. In the meantime, Sam flew the aircraft, handled all the radio calls and, in generai, managed the flight as if he were the only pilot on board. C.R. did interrupt his busy right-seater occassionally, emphasizing some of the finer points of bargain hunting and detailing the most popular items on the market this season. "Those little brass storks are supposed to bring good luck or something, Sam," he coaxed. "You've really got to take one of 'em back with you. And they've also got those genuine imitation leather utility bags made to carry everything from racket ball rackets to kitchen sinks, complete with shoulder straps too. I'm talking bargains here, Sam, big bargains!"

By this time they were starting their descent, so the Zealous Shopper recovered from his temporary trading tantrum and took control of the airplane to make the approach and landing. "Can't let you get too much stick time, eh Sam—going-down checklist if you pleeeeese."

"Picking up some scattered weather returns closer in toward the airbase," reported the navigator as he fine tuned the radar. "Shouldn't be anything we can't dodge, though."

"Thanks, Blinky, we'll be sure and stay clear of those forecast 'cumulo-nemeses.' In fact," C.R.'s eyes brightened with one of his Terrorific inspirations, "this would be an ideal time to try out their VF'n'R overhead pattern and just fly a visual approach instead of being distracted by controllers and radios. Besides," he reasoned, "overheads and tiger pitch outs put the capital 'T' in tactical airlift. And," he added without keying his mike, "it'll get us on the ground quicker, leaving more time for an off-base foray." Pleased with himself and this apparently clever course of action, C.R. requested vectors to initial for the overhead pattern.

"Roger, Rotun 21, turn left, heading 270. Maintain 1,700, report break," instructed the tower.

"This is the only way to fly, weeeooo!" cheered C.R. as he whipped the Hercules into a steep bank and rolled out on the

proper heading. "Reminds me of the way we used to do things during the war. Did I ever tell you about the time I was coming into Da Nang with both hydraulic systems shot up". . .? Suddenly Sam realized C.R.'s nonstop narrative was partially blocking an urgent call from tower, ". . . I repeat, Rotun 21, carry through on initial, F-4 emergency in progress . . . reenter . . . stay clear of Kimchee Gun . . . ."

"What was that?" Sam winced, trying to make out the rest of the transmission over C.R.'s loud talking and the now continuous transmissions on guard frequency from the stricken fighter.

"Not to worry, Sam," reassured the Titan of Tactical Airlift, pausing briefly in his story, "We're VFR so alls we gotta do is fly around out here 'till they get that fighter jock down safely, then re-enter the good old overhead pattern—why, I remember one day in Saigon," continued the Loquacious Leftseater without taking a breath, "There were so many inflight emergencies they had to put 'em all in the holding pattern and sort them out in alphabetical order." Scooting along at 200 knots and heading west, C.R. and crew became temporarily engrossed in their separate but only semi-related activities. Blinky was glued to the radar scope; Max Torque was going over the maintenance forms, writing up some minor discrepancies; Sammy was unfolding a local area chart and trying to find out what and where "Kimchee Gun . . ." was and C.R. was blissfully dividing his attention between listening to the fighter's dramatic emergency recovery and offering "helpful" hints to no one in particular on the best way to land an F-4 with control problems.

For reasons unknown, Sam and C.R. suddenly looked up in unison just in time to catch a glimpse of the business end of an F-4 diving across their windscreen. It passed so close the awesome roar from the fighter's deadly cannon fusillade shook the cockpit and the bright red stream of tracers reflected in their two sets of saucer-sized eyes. "He's shooting at us!" C.R. shouted, causing Sergeant Torque to leap from the engineer's seat and Blinky to seek cover under the nav table.

"Gunnery range!" gasped Sam. "We're in the Kimchee gunnery range!"

"Yipes!" yelled C.R., jinking to the left and heading south as fast as the props would pull their brown-and-green trash hauler. Beating a hasty retreat out of the restricted area, the previously distracted duo now had their noses nearly pressed against the windscreen scanning fretfully for any other traffic. As they exited the range and turned east toward the traffic pattern entry point, they counted three other fast-movers crossing their path; and two Korean transports and half a dozen helicopters, all more or less at their same altitude and requiring course changes to avoid possible conflict. By the time they were on the east side of the base again, the perspiring pilots heard the F-4 terminate its emergency as it taxied clear of the runway. "This place is like a beehive," Sammy observed, and a visibly shaken C.R. could only nod in doleful agreement. "Hey Sam," he said weakly, "give approach a call and have 'em pick us up for an ILS full stop. Somehow I'm not in the mood to shoot an overhead pattern any more."

"My sentiments exactly," agreed Sammy.

Once they were on the ground, C.R.'s countenance quickly brightened when he reminded himself of the impending shopping jaunt. "That delay cost us some precious time, but if we hustle we still can dash down to the main gate and do some high-speed bargaining before taking this beast over to Yokota for the night," announced the Surreptitious Shopper as the props slowed to a stop.

"Major Terror," a haggard-looking captain called from the cockpit entrance steps. "I'm Captain Suggens from the ACC and I'm here to give you a ride in. There are some people who want to talk with you about that near miss on the gunnery range a little while ago. And Colonel Talon would like you to give us a statement before you depart on your next leg. If we hustle, we'll just have time enough to complete all the paperwork before your scheduled departure.

"Paperwork, just what I need," the Crestfallen Flyer lamented as he slowly got out of the seat to follow the captain down the steps. "Well Sam, we all learned a lesson today, didn't we?"

"Sure did, Skipper," confirmed his copilot. "Not to allow ourselves to get distracted while flying, among other things."

"No, no, Sam m'lad, the lesson is don't ever try to get too far ahead of the game. Let's face it, May is just too early to do Christmas shopping."

"Whatever you say, boss," acquiesed the long suffering copilot. "Whatever you say."

As the Misdirected Major got in the staff car he called back to his assembled crew with visibly returning enthusiasm, "Be sure and have everything ready to go as soon as I get back. We've got to get to Yokota in time for the all-you-can-eat Chinese buffet tonight."

QUICK STOPPERS

To Err Is . . .

It's no crime to make a mistake. A real crime is committed, however, when we try to *hide* that mistake. The hidden mistake is the most serious offense in aviation, and when it's a deliberate act, it is unforgivable. Even so, errors are sometimes not considered as important as the embarrassment of being discovered. That's a poor way to look at it, because hidden mistakes can cause needless waste, destruction of equipment, and, yes, even death.

It's far better to admit a mistake, accept its consequences and make the needed correction, than it is to wake up some morning and be slapped in the face with the full-grown repercussion of "your secret."

Making mistakes is human. It takes intelligence and maturity to learn from them. Refusing to admit them, or worse yet, hiding them, is a disservice to you and your fellow aviators.

—Adapted from SIA *Flight Safety Review*

Hercules Hailed

We are constantly cautioned not to fly into thunderstorms, and most of us heed these warnings of imminent threats to our lives. But, a few flyers are *required* to penetrate violent weather in their WC-130s to get information about tropical storms. Sometimes they gather a little more data than they planned on. Last winter a weather Hercules entered a storm at about 10,000 feet where the temperature was 12°C. It encountered just four seconds of light to moderate hail. This short pelting, however, was enough to crack the WC-130's radome. Imagine what could happen to your aircraft if you strayed into a more active part of a thunderstorm and encountered heavy hail and rain for 20 or 30 seconds.

On the Skids

With an IP in the left seat and a copilot in the right, the Huey launched on a local training mission. At the practice field, the right-seater went through various emergency procedures. Coming in from the west for a slide landing, the pilot flew a normal shallow approach, however, he had a little trouble with the initial-touchdown portion of the landing. After the UH-1 decelerated through translational lift, the right-seater let it pound the turf a little harder than desired.

During the next circuit around the pattern, the IP briefed techniques for cushioning slide landings and elected to demonstrate one. The instructor flew a shallow approach for his landing to the west. Winds were reported variable 090° to 270°. He planned to touchdown in the first third of the dirt strip. At about four feet AGL the left-seater stopped the descent to demonstrate the ground-cushion effect and how to touch down without large changes in power.

With the Huey flying forward at 15 to 20 knots, the IP touched the ground lightly about half way down the 800-foot landing zone. He then continued his demonstration and showed the student how to control direction with the torque pedals and how to slide along "light on the skids." When the chopper was about 200 feet from the end of the strip and from the edge of a helipad, the IP lowered the collective to slow the Huey. At that point, the UH-1 slipped onto the oil-based surface of the landing zone. Even though the LZ had a somewhat reduced coefficient of friction because of the hot weather, the helicopter flyer still believed the Huey would stop before reaching the aluminum matting on the helipad, so he decided not to pick the UH-1 up into a hover. A slight tail wind combined with the low surface friction and the IP's long touchdown extended the helicopter's slide onto the landing pad. Unfortunately the aluminum-matting surface wasn't quite level with the landing strip and several skid parts were damaged as the Huey skipped over the lip and finally stopped 18 feet into the helipad.

The helicopter pilot had indeed given an impressive demonstration, though it wasn't quite the one he had planned. He demonstrated several IP pitfalls, including poor planning, failing to recognize a developing dangerous situation, and generally doing too much instructing and not enough piloting.

Superchief Saves Huey

Another service's C-130 taxied to base ops between an Air Force Hercules and the duty SAR helicopter, a UH-1N. As the left wing of the taxiing C-130 approached the Huey; the marshaller gave the pilot a hold signal. However, the pilot kept the Hercules moving forward and a crewmember jumped out the troop door to walk the wing. He promptly gave a come-ahead signal. The Helicopter crew chief leaped out of the UH-1 and gave the Herk driver the stop signal, which he also chose to ignore. Realizing the oncoming turboprop wasn't slowing, the crew chief bounded atop his helo and manually raised the main rotor blade. The left wing of the C-130 passed between the top of the UH-1 fuselage and the elevated blade. The crew chief's super effort allowed the helicopter's blade and the Hercules' left wing to clear by less that six inches. This is direct mishap prevention in its purest form, but it shouldn't have been necessary had the pilot followed instructions from the "official" marshaller who gave him the hold signal. Perhaps that old saw about taxiing needs repeating, "If it looks close, stop and check your clearances."

Boom's Away

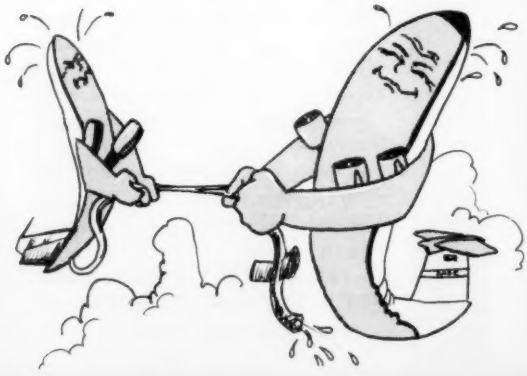
The C-5 has once again retained its title as tug-of-war champ against SAC's tanker fleet—albeit the 640,000-pound Galaxy had an overwhelming weight advantage. Rendezvous and intitial contact were going well until the Galaxy pilot found he couldn't see the KC-135's director lights due to the sun reflecting off the bottom of the tanker.

The boom operator began giving verbal instructions to keep the heavy-weight airlifter in the refueling envelope. An "18-feet" report cued the C-5 flyer to add some power to get closer to the gray gas passer. As the Galaxy closed in, the boomer called 12 feet and then eight feet. Feeling the C-5 was getting too close, the tank's back-end man initiated disconnect, but the nozzle didn't come free because of mechanical binding with the Galaxy's receptical. With the giant aircraft continuing to get closer, the boomer called for a breakaway.

At the boomer's command, the C-5 pilot started the breakaway maneuver, but both he and his copilot pressed their disconnect buttons with no apparent results. The fleeing Galaxy pulled the nozzle off the tanker's boom, but the Stratotanker got in the last lick when its nozzle jumped free of the C-5's air-refueling equipment and struck the big bird's tail on its earthward plunge.

There are some possible mechanical fixes for this type of problem, like modifications to the nozzle or receptacle. However, greater awareness on the part of both MAC and SAC crews of the Galaxy's slow response at heavy weight could also help prevent this type of mishap.

—Adapted from 436 MAW *Flying Safety Highlights*



Up, Up and Delay

A C-130 alert crew was notified of an urgent air-evacuation mission and they pressed hard to get their brown-and-green machine moving. In 30 minutes, flight planning and preflights were completed and the cockpit crewmembers were in their seats and ready for engine start. The number three turboprop wound up without any problem; seconds later number four engine was coming on speed. Suddenly the Hercules started to ease forward in a left turn. The pilot noticed the aircraft was moving and brought the throttles into reverse, slowing the aircraft almost to a stop as the mission commander's pickup truck disappeared from view under the Herk's nose. The copilot selected emergency brakes, and when pressure suddenly became available to the system, the C-130 lurched to a halt. The abrupt stop brought the nose of the Hercules down on the hood of the pickup truck, doing minor damage to both.

Apparently the right-seater forgot to set the brake system to emergency as part of the before-starting-engines checklist and the pilot didn't check to see if the hydraulic pressure dipped momentarily when he set the parking brake before the chocks were pulled. Despite the minor mishap, the air-evac mission got off the ground in another aircraft, but a lot of time could have been saved if the crew had hurried a little less and taken a few extra seconds to do the job right on the first try.

AFTER DEADLINES

COVERED-UP DAMAGE TO A MAC AIRCRAFT incurred during a hard landing increased the risk of an undetected aircraft structure failure. The crew placed speed tape over the scraped aft-belly area, made an innocent-looking write-up in the AFTO form 781, and continued their mission. Five sorties, three crews, 185 passengers and over 20 hours of flying later, the plane returned to its home station where maintainers discovered the true extent of the damage. If an aircraft is damaged, the crew has both a legal and moral obligation to report it. Any structural damage must be evaluated by maintenance personnel before the aircraft can safely fly again. Trying to cover up what looks like "only a little scrape" could prove disastrous.

WHAT A DIFFERENCE A DASH MAKES, especially in last month's *TMF* thunderstorm centerfold entitled "Know Your Enemy." The minus sign was inadvertently dropped from the 20° C associated with inflight icing. The note near the center of the illustration should have read, "Icing usually occurs from 0° C to -20° C."

A REWINGED C-5 RECENTLY COMPLETED OPERATIONAL MISSIONS from Dover AFB, Delaware. The first mission airlifted over 98,000 pounds of cargo to Ramstein AB, Germany, returning to Dover via RAF Mildenhall, U.K. A second mission flew from Tinker AFB, Oklahoma, direct to Yokota AB, Japan, with an air refueling enroute. Both journeys went smoothly.

AT LEAST ONE MAC CREW apparently hadn't perused the April issue of the *Flyer* before going to fly recently--especially the article, "Slip Slidin' Away," on page seven, dealing with hydroplaning. Landing on a wet runway, their aircraft scooted right off the end of the 10,000-foot-long strip. Fortunately for the crew, they didn't slide off the side and run into some immovable object. Remember, spring showers bring more than May flowers, especially to aerodromes.

NEW RADIO ABOARD HC-130s HELPS WITH RESCUE MISSIONS. Life-saving Hercules assigned to ARRS now have a high-band VHF-FM radio operating in the 150 to 174 MHz range. Using the new FM radio, Rescue crews can communicate more effectively with civil authorities and ships at sea, thus speeding help to people in distress.

SYSTEM SAFETY SOCIETY ANNOUNCES the Fifth International System Safety Conference to be held 26 through 31 July 1981 in Denver, Colorado, at the Brown Palace Hotel. It's aimed at providing a forum for safety professionals to exchange information on technical and managerial concepts, methods, and new developments in system safety. For further information, write the Society at 145 E. Costella Ave, Littleton, CO 80122, or call 303-977-1647.

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Touch 'n Go

Cranston, how many times have I counseled you about those cheap cigars?